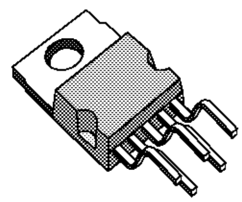
SGS-THOMSON MICROELECTRONICS

L149

4A LINEAR DRIVER

- HIGH OUTPUT CURRENT (4A peak)
- HIGH CURRENT GAIN (10.000 typ.)
- OPERATION UP TO ± 20 V
- THERMAL PROTECTION
- SHORT CIRCUIT PROTECTION
- OPERATION WITHIN SOA
- HIGH SLEW-RATE (30 V/µs)



Pentawatt®

ORDER CODE : L149V

DESCRIPTION

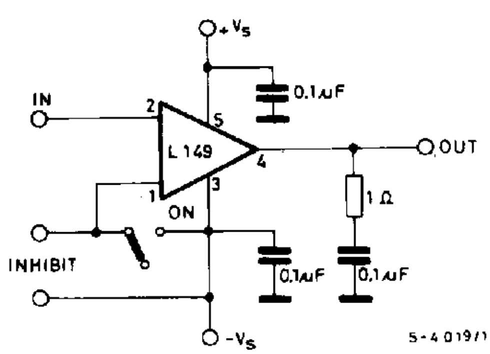
The L149 is a general purpose power booster in Pentawatt ® package consisting of a quasi-complentary darlington output stage with the associated biasing system an inhibit facility.

The device is particularly suited for use with an operational amplifier inside a closed loop configuration to increase output current.

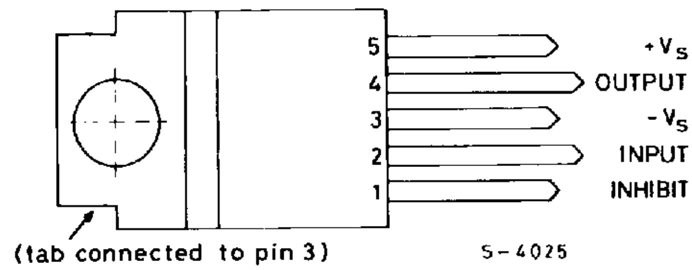
ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_s	Supply Voltage	±20	V
V_i	Input Voltage		V_s
V_5 - V_4	Upper Power Transistor VCE	40	V
V_4 - V_3	Lower Power Transistor V_{CE}	40	V
I_o	DC Output Current	3	A
I_o	Peak Output Current (internally limited)	4	A
V_{INH}	Input Inhibit Voltage	- Vs + 5 - Vs - 1.5	V V
P_{tot}	Total Power Dissipation at T_{case} = 75 °C)	25	W

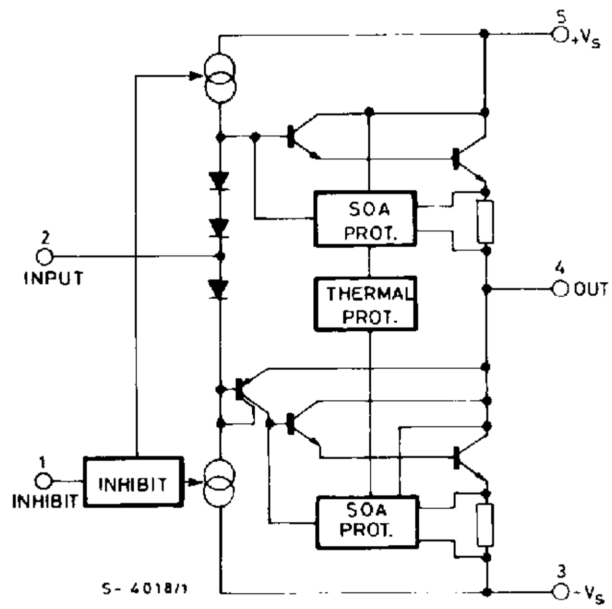
TEST CIRCUIT



CONNECTION DIAGRAM (top view)



SCHEMATIC DIAGRAM



THERMAL DATA

Symbol	Parameter		Value	Unit
Rth-j-case	Thermal resistance junction-case	max	3	°C/W

ELECTRICAL CHARACTERISTICS (T_j = 25 °C, V_s = ± 16V)

Symbol	Parameter	Test conditions		Min.	Typ.	Max.	Unit
V_s	Supply Voltage					± 20	V
I_d	Quiescent Drain Current	V_s = ± 16 V			30		mA
I_{in}	Input current	V_s = ± 16 V	Vi = 0V		200	400	µA
h_{FE}	DC current drain	V_s = ± 16 V	Io = 3A	6000	10000		-
G_V	Voltage gain	V_s = ± 16 V	Io = 1.5A		1		-
V_{CEsat}	Saturation voltage (for each transistor)	Io = 3A				3.5	V
V_{os}	Input offset voltage	V_s = ± 16 V				0.3	V
V_{INH}	Inhibit input voltage (pins 1-3)	ON condition				± 0.3	V
		OFF condition		± 1.8			
R_{INH}	Inhibit input resistance				2.0		KΩ
SR	Slew rate				30		V/µs
B	Power bandwidth	V_o = ± 10V, d = 1%, R_L = 8Ω			200		KHz

APPLICATION INFORMATION

Figure 1. **High slew-rate power operational amplifier (SR = 13V/µs)**

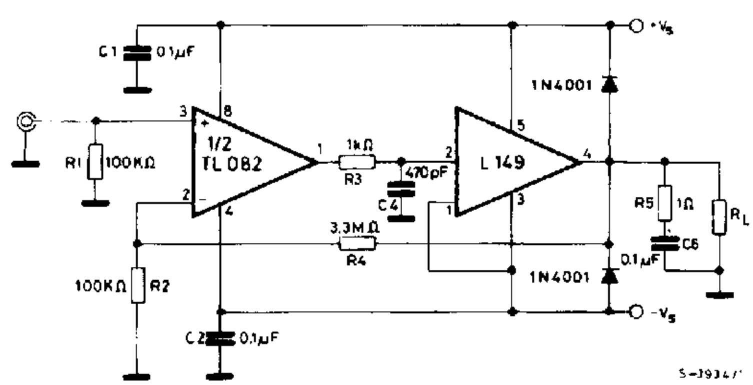


Figure 2. Maximum saturation voltage vs. output current.

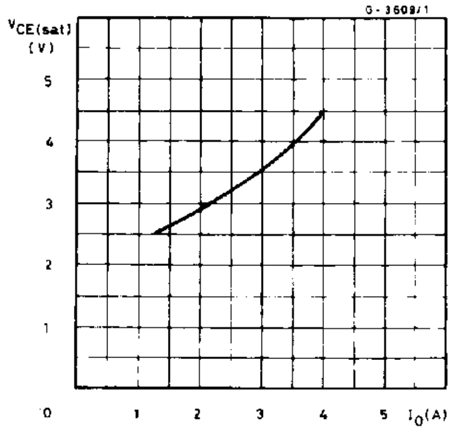


Figure 3. Current limiting characteristics.

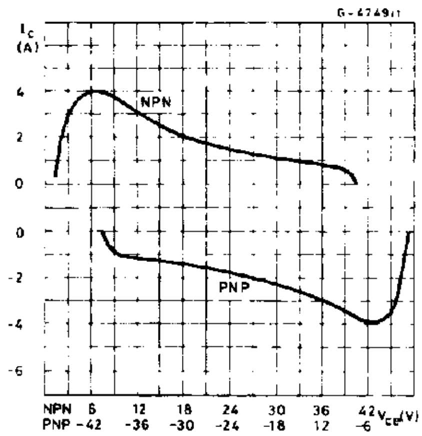


Figure 4: Supply voltage rejection vs. frequency.

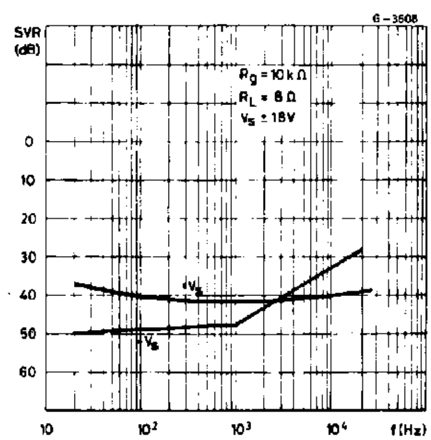


Figure 5: Distorsion vs. output power (f = 1KHz).

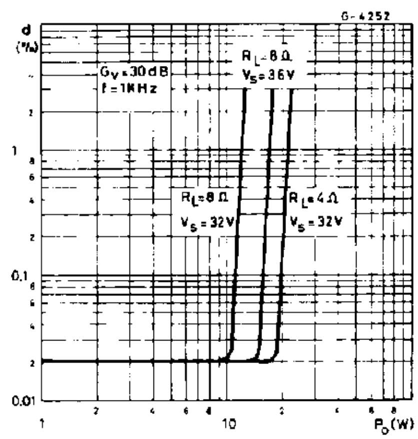


Figure 6. Distorsion vs. output power (f = 1KHz).

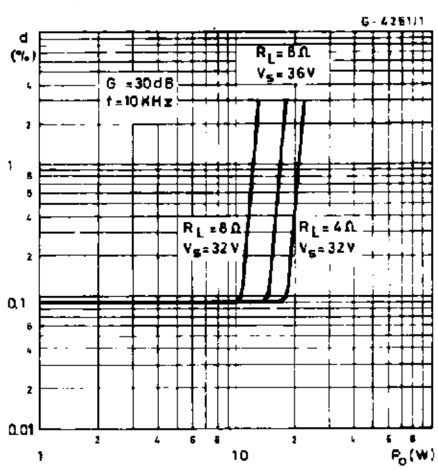
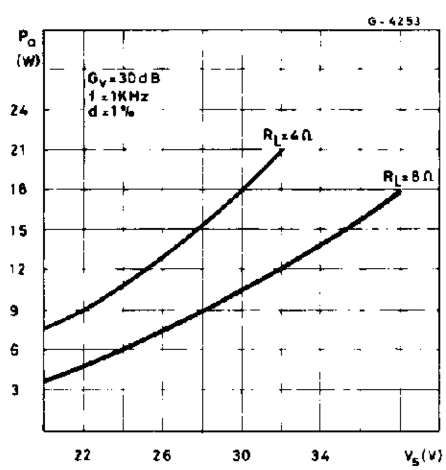


Figure 7. Output power vs. supply voltage.



PENTAWATT PACKAGE MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			4.8			0.189
C			1.37			0.054
D	2.4		2.8	0.094		0.110
D1	1.2		1.35	0.047		0.053
E	0.35		0.55	0.014		0.022
F	0.8		1.05	0.031		0.041
F1	1		1.4	0.039		0.055
G		3.4		0.126	0.134	0.142
G1		6.8		0.260	0.268	0.276
H2			10.4			0.409
H3	10.05		10.4	0.396		0.409
L		17.85			0.703	
L1		15.75			0.620	
L2		21.4			0.843	
L3		22.5			0.886	
L5	2.6		3	0.102		0.118
L6	15.1		15.8	0.594		0.622
L7	6		6.6	0.236		0.260
M		4.5			0.177	
M1		4			0.157	
Dia	3.65		3.85	0.144		0.152

